The Global Language of Business

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Mr Joel Taubenblatt
Bureau Chief
Wireless Telecommunications Bureau
Federal Communications Commission
45 L Street NE
Washington DC 20554
USA

Comments on WTB Docket No. 24-240

Dear Mr Taubenblatt,

Thank you for the opportunity to comment on docket 24-240.

GS1[1] is a neutral, not for profit global standardisation body driven by industry and present in 118 countries through its member organizations. Designed by consensus, GS1 standards are proven, open and benefit from collaboration with respected global companies. Our scale and reach —over two million user companies and 10 billion GS1 barcode scans across the global supply chain every day — helps ensure that there is a common language of business for product data identification, capture and share across the globe.

A growing number of products and assets also leverage GS1's suite of EPCglobal standards[2], which have served as the backbone for the interoperable use of RFID for over 20 years[3]. Through the use of serialization and high-speed data capture, RFID enables more precise supply chain visibility and substantially increased throughput across the supply chain as well as at point-of-sale, making business processes more efficient and inventory management more accurate.

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[1] https://www.gs1.org/
[2] https://www.gs1.org/epcglobal
[3] https://www.gs1.org/standards/rfid

Passive UHF RFID tags (also known as 'RAIN' RFID tags) operate in the 902-928 MHz band in the United States, and are considered Part 15 devices by the FCC.

GS1 believes that the FCC's 2013 decision not to adopt new rules regarding the 902-928 MHz band remains more valid than ever, with an ever-growing number of RFID deployments in the supply chain and at retail points of sale, across the United States and around the world.

GS1 is extremely concerned about NextNav's petition to the FCC to re-allocate the 902-928 MHz band and re-define rules for its use. In particular, we are concerned by NextNav's proposal to increase transmit power to 3280 W/MHz EIRP for 918-928 MHz band, as well as by the proposal for preferential treatment of NextNav devices.

We are also concerned by the NextNav petition's omission of RF interference testing and analysis of impacts on the incumbents of the 902-928 MHz band. A preliminary analysis by the RAIN RFID Alliance has determined that:

1. NextNav base stations will cause significant interference with RAIN RFID readers which are within ~14 kilometers in rural areas or within ~11 kilometers in urban areas, **rendering RAIN RFID deployments unusable**.
2. RAIN RFID deployments of a single RAIN reader will interfere with NextNav mobiles located within 1 kilometer. The NextNav rule-making petition requests that they would have preferential treatment, which would mean that these interfering **RAIN RFID deployments would be required to shut down**.

In summary, **the NextNav proposal would make continued use of the RFID technology in the United States extremely difficult, and in many places impossible**. The resulting disruption of RFID systems would negatively impact domestic and global supply chains, causing gaps in supply chain visibility and inefficiencies in inventory management, and putting US-based business operations at a competitive disadvantage.

For this reason, GS1 urges the FCC to reject the NextNav petition.

Sincerely

Steven Keddie
Senior Director, Automatic Identification and Data Capture (AIDC)

GS1 Global Office responses and comments to FCC questions

FCC Section: Identification and protection of incumbents

We also invite comment on the status of any outreach with primary federal and non-federal incumbents.

GS1 is unaware of NextNav conducting any outreach activities with any users or providers of GS1 standards-based RFID technology, or any other supply chain stakeholders.

We seek comment on potential impacts, including details regarding incumbent relocation, whether any incumbents could continue to operate in the proposed 11 MHz segment of the band where currently located, and any information on the status of discussions between NextNav and non-M-LMS incumbents.

GS1 is unaware of NextNav having requested input from GS1, its US-based member organisation GS1 US[4], or any users or providers of GS1 standards-based RFID technology. Testing of RF interference impact has not been possible, due to the accelerated comment window, but **the RAIN RFID Alliance has produced a preliminary analysis[5]**.

We seek comment on the extent of part 15 devices and amateur operations in the band and what potential impact band reconfiguration and flexible use rules, including elimination of the testing requirements of current rule section 90.353(d)(30) might have on part 15 devices and on the amateur community.

As of September 2024, over 200 billion RFID tags have been deployed worldwide. An estimated 40% of these have been used in the US, providing increased visibility, inventory accuracy, handling efficiency and theft prevention for 80 billion RFID-tagged products and other assets (and counting!) in diverse sectors from aviation to automotive, food safety and retail.

Exhaustive field testing is essential to produce a detailed analysis of all potential RF interference impacts, in order to protect the incumbents already using the band.

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[4] https://www.gs1us.org/

[5] https://rainrfid.org/quantifying-the-impact-of-the-nextnav-rule-making-petition/

What services are being provided by part 15 devices and amateur operations in this band?

Part 15 devices include RFID, a technology which strengthens the efficiency and resilience of American supply chains, as described in the Executive Order on *White House Council on Supply Chain Resilience*[6] of 14 June 2024.

RFID enables increased operational efficiency, to keep US manufacturing competitive.

RFID improves stakeholders' visibility of product movements, within internal inventory as well as across the supply chain, to ensure adequate stocks and replenishment of supplies in everyday operations as well as in case of national emergencies.

Can they be accommodated in other spectrum bands?

Relocating part 15 devices to other spectrum bands would be costly and detrimental to incumbent RFID systems. Current deployments would need to upgrade or replace already installed RFID readers and antennas. RFID tags already in circulation would need to operate outside their designed bands, reducing their efficiency and reliability.

What are the costs for relocation and how long would it take?

Because of the widespread use of the RFID technology, relocation costs are likely to be substantial, but difficult to estimate. The unlicensed nature of Part 15 devices means that there is no comprehensive list of all users and their installations.

Requests and Questions for FCC

GS1 would like to review NextNav's field testing results and analysis of the anticipated interference to RFID technology (80 billion tags and counting) incumbent in the 902-928 MHz band in the United States.

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[6] https://www.whitehouse.gov/briefing-room/statements-releases/2024/06/14/executive-order-on-white-house-council-on-supply-chain-resilience/